

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202311059753 A

(19) INDIA

(22) Date of filing of Application :05/09/2023

(43) Publication Date : 06/10/2023

(54) Title of the invention : DYNAMIC VULNERABILITY DETECTION AND REMEDIATION FORBLOCKCHAIN SMART CONTRACTS USING MACHINE LEARNING AND VIRTUAL SANDBOXES

(51) International classification :G06F0021570000, G06N0020000000, H04L0009320000, G06F0021530000, A61F0013150000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

(71)Name of Applicant :
1)Chitkara University
 Address of Applicant :Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India. Patiala -----

2)Bluest Mettle Solutions Private Limited
Name of Applicant : NA
Address of Applicant : NA

(72)Name of Inventor :
1)MISHRA, Rahul
 Address of Applicant :ODC-4, Panchshil Tech Park, inside Courtyard by Marriott premises, Hinjewadi Phase - 1, Pune - 411057, Maharashtra, India. Pune -----

2)SINGH, Dhiraj
 Address of Applicant :ODC-4, Panchshil Tech Park, inside Courtyard by Marriott premises, Hinjewadi Phase - 1, Pune - 411057, Maharashtra, India. Pune -----

3)MANTRI, Archana
 Address of Applicant :Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India Patiala -----

(57) Abstract :
 The disclosed invention presents a proactive dynamic vulnerability detection system and method designed to enhance the security of blockchain smart contracts. By combining advanced machine learning units (100), virtual sandbox technologies (200), vigilant monitoring (300), and automated remediation, the system identifies, analyzes, and mitigates potential vulnerabilities. The machine learning unit (100) detects known and unknown vulnerabilities by analyzing source code, bytecode, and historical data. Virtual sandboxes (200) provide secure testing environments, while the monitoring unit (300) tracks interactions for anomaly detection. Comprehensive reports and automated remediation recommendations empower stakeholders to address security risks effectively. This approach offers advantages such as early vulnerability detection, secure testing, and continuous learning, bolstering the security and integrity of blockchain-based applications and smart contracts in the face of evolving threats

No. of Pages : 25 No. of Claims : 10